#3153
Q

WATER QUALITY MEMORANDUM
Utah Coal Regulatory Program

July 6, 2010

TO: Internal File

THRU: James D. Smith, Permit Supervisor JDS 07 July 2010

FROM: Steve Christensen Environmental Scientist SKC

RE: 2008 1st Quarter Water Monitoring, Consolidation Coal Company, LLC, Emery Deep Mine, C/015/0015, WQ08-1, Task ID #3153

The Emery Deep Mine is an active coalmine. The coal mining operation utilizes room and pillar mining techniques with the use of a continuous miner machine. The coal reserves are fully extracted (thus falling into the planned subsidence category).

The approved Mining and Reclamation Plan (MRP) outlines the water monitoring requirements beginning on page VI-28. Table VI-17, *Emery Mine Hydrologic Monitoring Program* contains a comprehensive list of all groundwater (springs/seeps), surface water, groundwater monitoring wells and Utah Pollutant Discharge Elimination System (UPDES) outfalls. Plate VI-4, *Ground Water Monitoring Well and Surface Water Monitoring Site Location Map* depicts the locations of the various ground and surface water monitoring sites (including the UPDES discharge/outfall points).

1. Was data submitted for all of the MRP required sites? YES ☒ NO ☐

Springs

The MRP outlines the sampling of 5 springs within the permit and adjacent area. Flow and field parameters are sampled quarterly with water quality samples collected in the 2nd and 3rd quarters.

The Permittee submitted data for all required spring sites.

Streams

The MRP outlines the sampling of 8 surface water monitoring stations within the permit and adjacent area. Surface water monitoring site SWMS-1 is actively monitored; however, not listed in the MRP.

The Permittee submitted data for all required stream sites.

Wells

The MRP outlines the sampling of 33 ground water monitoring wells within the permit and adjacent area. Of the 33 wells, 14 are monitored quarterly for water level only. The remaining 19 wells are sampled for water quality on a quarterly basis with the exception of wells RDA-1, RDA-2, RDA-3, RDA-4, RDA-5 and RDA-6 (sampled annually in the second quarter for both field parameters and water quality).

Six of the 33 well installations (AA, H, I, R2, T1 and T2)) contain clusters of casing completed to different depths within the underlying strata. Well AA contains four completions (AA-B, AA-L, AA-M and AA-U). Wells H and I contain four completions as well (H-B, H-L, H-M, H-U and I-B, I-L, I-M and I-U respectively). Well R2 contains three completions (R2-B, R2-M and R-U). Well T1 contains two completions (T1-B and T1-U). Well T2 contains two completions as well (T2-B and T2-U).

The Permittee submitted data for all required wells.

UPDES

The Emery Deep Mine's UPDES Permit, #UT0022616, identifies 9 outfalls (001, 002, 003, 004, 005, 006, 007, 008 and 009). The discharges from each of the outfalls ultimately report to Quitchupah Creek, a tributary of Muddy Creek. The receiving waters are designated according to Utah Administrative Code (UAC) R317-2-13.1 as 2B, 3C and 4.

- *2B-Protected for secondary contact recreation such as boating, wading or similar uses.*
- *3- Protected for nongame fish and other aquatic life, including the necessary aquatic organisms in their food chain.*
- *4- Protected for agricultural uses including irrigation of crops and stock watering.*

The Permittee submitted data for all required UPDES sites.

2. Were all required parameters reported for each site? YES ☒ NO ☐

3. Were any irregularities found in the data? YES ☒ NO ☐

Spring Monitoring Sites

SP-10: A flow value of 179.52 gallons per minute (gpm) was reported for this quarter. The flow value is outside the mean value of 34.26 by 2.00 standard deviations.

SP-15: A flow value of 17.95 gpm was reported for this quarter. The flow value is 3.03 standard deviations from the mean value of 1.31 gpm.

UPDES Sites

Upon review of the data submitted, historically outfalls 002, 003, 004, 005, 006, 007, 008 and 009 have never produced a discharge. That trend continued for this quarter.

Outfalls 001 and 003 are the primary outlets for discharging the ground-water encountered within the mine works. Outfalls 001 and 003 reported discharges for this quarter. As outlined in the Permittee's Utah Pollutant Discharge Elimination System permit (UPDES), the effluent limitation for Total Dissolved Solids is 3,500-ppm. However, the reported TDS values for outfalls 001 and 003 have exceeded that limit for several years. Outfalls 001 and 003 reported average TDS values of 4,431-ppm and 4,103-ppm respectively for this quarter.

The Water Quality Board for the Division of Water Quality (DWQ) has approved a rule change that would allow for a site specific, in-stream standard for the Emery Deep's effluent limitations. The modified standard will establish an allowable TDS concentration of 3,800 parts per million (ppm) and a 2,000-ppm concentration of sulfate. DWQ representatives have indicated that they are waiting for Environmental Protection Agency (EPA) approval before the permit is modified from it's current standard of 3,500-ppm.

DWQ has been in negotiations with the Permittee for several years regarding a modification to their existing UPDES permit. The Permittee has entered into a compliance schedule as allowed under the rules of the Clean Water Act to modify their permit. The compliance schedule would produce a site-specific standard for the Emery Deep UPDES permit.

4. On what date does the MRP require a five-year re-sampling of baseline water data.

There is no commitment in the MRP to resample for baseline parameters.

5. Based on your review, what further actions, if any, do you recommend?

No further actions are necessary at this time.

6. Does the Mine Operator need to submit more information to fulfill this quarter's monitoring requirements? YES ☐ NO ☒

7. Follow-up from last quarter, if necessary.

None.

8. Did the Mine Operator submit all the missing and/or irregular data?

Yes.